

REMARKS:

In the Drawings:

Submitted herewith as a replacement sheet is a proposed drawing change to FIGS. 1-6, adding the words --(prior art)-- to the legend of each FIG.

Claim 18

Claim 18 has been objected to as duplicating limitations of its parent claim 13.
Claim 18 has been canceled.

Claims 1, 11, 23

Claims 1, 11 and 23 have been rejected under 35 USC 102(b) as being anticipated by Saito (US 2001/0004307).

Claim 1 has been amended to require that the end portions of the first and second free layers extend beyond the track edges by at least the length of the third free layer as defined between its track edges. This limitation is similar to that found in original claim 3.

In the rejection of claim 3, the rejection indicates that it is obvious to alter the dimensions of a known apparatus absent persuasive evidence of unexpected results due to the claimed dimensions. In the instant case, the longer dimensions of the first and second free layers relative to the third free layer have been found to improve the stability of the sensor structure. Particularly, as described in the present application at p. 21, line 16 to p. 22, line 6:

Because the pinning strength of the first and second layers 712, 714 becomes weaker as the width of the layers is decreased, the magnetic orientations of the first and second layers 712, 714 tend to become unpinned under electrical/mechanical stress. To overcome this tendency to flip, the first and second layers 712, 714 are made wider than the track width W. This is permissible because the first and second layers 712, 714 do not affect the effective track width W of the sensor 700.

As the portions of the first and second layers 712, 714 in the track width W try to flip under electrical/mechanical stress, the areas of the first and second layers 712, 714 outside the track edges of the sensor prevents the magnetic orientations of the first and second layers 712, 714 from flipping. Because the first and second layers 712, 714 are longer, the first and second layers 712, 714 have higher magnetic stability from the shape anisotropy. The width W of the sensor is very long compared to its height (into the page), this provides larger magnetic anisotropy for stability. The second layer 714 in turn stabilizes the third layer 718 via the ferromagnetic exchange coupling.

Accordingly, the structure as claimed provides features and benefits over and above that provided by Saito. Particularly, the claimed sensor is much less susceptible to flipping than Saito's sensor. The result is a sensor that functions reliably, even with a very narrow track width. Thus, the claimed sensor structure is a great improvement over Saito, is nowhere suggested by Saito, nor is an obvious variant of Saito's structure. Accordingly, claim 1, as amended, is believed to pass muster under *Gardner* (*Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984)). Reconsideration and allowance of claim 1 is respectfully requested.

Claims 11 and 23 have been amended to depend from claim 2, which has been indicated as allowable and is now rewritten in independent form. Accordingly, claims 11 and 23 are believed to be allowable.

Claims 3-7, 10, 15-17

Claims 3-7, 10, and 15-17 have been rejected under 35 USC 103(a) as being unpatentable over Saito.

Claims 3-7 and 10 have been amended to depend from allowed claim 2. Accordingly, claims 3-7 and 10 are believed to be allowable.

Claims 15-17 have been amended to depend from claim 14, which has been indicated as allowable and is now rewritten in independent form. Accordingly, claims 15-17 are believed to be allowable.

Claims 8, 13, 18, 20-21

Claims 8, 13, 18, and 20-21 have been rejected under 35 USC 103(a) as being unpatentable over Saito in view of IBM TDB Dec. 2001, no. 452, p. 2016.

Claim 8 has been amended to depend from allowed claim 2. Accordingly, claim 8 is believed to be allowable.

Claim 13 claims limitations similar to those of amended claim 1. Claim 13 is believed to be allowable for the same reasons as claim 1. Reconsideration and allowance of claim 13 is respectfully requested.

Claim 18 has been canceled.

Claims 20-21 have been amended to depend from allowed claim 14. Accordingly, claims 20-21 are believed to be allowable.

Claim12

Claim 12 has been rejected under 35 USC 103(a) as being unpatentable over Saito in view of Brug et al. (US 5930087).

Claim 12 has been amended to depend from allowed claim 2. Accordingly, claim 12 is believed to be allowable.

Claim 22

Claim 22 has been rejected under 35 USC 103(a) as being unpatentable over Saito in view of IBM TDB Dec. 2001, no. 452, p. 2016 and in further view of Brug.

Claim 22 has been amended to depend from allowed claim 14. Accordingly, claim 22 is believed to be allowable.

Claims 2, 9, 14, 19

Applicant acknowledges and appreciates the indication of allowable subject matter. Claims 2, 9, 14 and 19 have been rewritten in independent form including all limitations of the base claim and any intervening claims.

In the event a telephone conversation would expedite the prosecution of this application, the Examiner may reach the undersigned at (408) 971-2573. For payment of any additional fees due in connection with the filing of this paper, the Commissioner is authorized to charge such fees to Deposit Account No. 50-2587 (Order No. HSJ920030205US1).

Respectfully submitted,

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AMENDMENT TO THE DRAWINGS:

The attached sheets of drawings include changes to Figs. 1-6. These sheets replace the original sheets for Figs. 1-6.

In Figs. 1-6, the words --(prior art)-- have been added to the legends of the Figs.

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